

 One Dorset Pathology	Title: Blood Sciences Test Repertoire / Handbook	
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Blood Sciences Test Repertoire / Handbook

Tests performed at Dorset County Hospital

Sample volumes:

A minimum 5ml sample is required for most investigations (adults), the number of tests will dictate the final volume required, if unsure please contact the laboratory or refer to the ICE blood form for the number of bottles required.




Reference Ranges:

Reported results and units will be accompanied with a reference range that is appropriate to the age and sex of the patient. For specific enquires please contact the laboratory directly on 01305 254331.




Measurement Uncertainty:

Measurement Uncertainty data for each test performed at Dorset County Hospital is available by contacting the lab on 01305 254331.




Test Name	Sample Type / Tube Type	Alternative Name	ICE Code	Test & Sample Information/special precautions	Routine Turnaround Times	Add on Limit
Alpha fetoprotein	Blood / SST	AFP	AFP	AFP can be used to aid in the diagnosis of HCC or in the management of patients with non-seminomatous germ cell tumors. No specific sample requirement.	72 hours	6 days
Albumin	Blood / SST		ALB	Albumin is measured using the BCP method. Part of liver profile code L No specific sample requirement.	24 hours	6 days

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Alkaline Phosphatase	Blood / SST	Alk Phos ALP	ALP	<p>ALP is used to assess liver function and can be elevated in diseases of the skeletal system, hyperparathyroidism, rickets and osteomalacia.</p> <p>Part of liver profile code L</p> <p>No specific sample requirement.</p>	24 hours	6 days
Alcohol (Plasma)	Blood / Fluoride Oxalate or Fluoride EDTA	Ethanol	ALC	<p>Alcohol test is used for the indication of alcohol intoxication and poisoning.</p> <p>No specific sample requirement.</p>	24 hours	6 days
Alanine Aminotransferase	Blood / SST	ALT Alanine transaminase	ALT	<p>ALT is used to assess liver function.</p> <p>Part of liver profile code L</p> <p>No specific sample requirement</p>	24 hours	6 days
Ammonia	Blood / EDTA		AMM	<p>Ammonia is used to indicate deficiencies in the urea cycle enzymes (inherited) or acquired acute (i.e. Reye's syndrome) or chronic liver disease and to aid diagnosis of advanced liver diseases.</p> <p><u>Specific sample requirements:</u> Contact lab in advance</p> <p>Sample MUST be sent down to lab on ice and received in lab within 15 minutes of venipuncture.</p>	24 hours	Not available.

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				<p>Haemolysis can elevate the result and are not acceptable.</p> <p>Delayed receipt of sample will also result in elevated results.</p>		
Amylase - Serum	Blood / SST		AMY	<p>Amylase is used to aid diagnosis of Pancreatitis or other pancreatic diseases.</p> <p>No specific sample requirement.</p>	24 hours	6 days
Amylase - Urine	Urine / yellow monovette		AMYU	No specific sample requirement	24 hours	6 days
Anti Xa - Low Molecular Weight Heparin	Blood (plasma) / Sodium Citrate	Low molecular weight heparin	LMWH	<p>A chromogenic clotting test to determine the level of Low Molecular Weight Heparin anticoagulant in a patient's plasma. Please note, this test is only suitable for Low Molecular Weight Heparins such as Clexane.</p> <p>Other Direct Oral Anticoagulants (DOACs) require a different test. Please contact the haematology laboratory for more information.</p> <p><u>Special sample requirements:</u></p> <ul style="list-style-type: none"> • Contact laboratory before taking sample • Must be frozen within 4 hours of sampling. • Must be filled to within +/- 10% of the fill line. 	24 hours	4 hours
AST	Blood / SST	Aspartate Aminotransferase	AST	AST is primarily used to assess liver function but can also be elevated in diseases of the heart, muscle and kidney. AST also can be elevated	24 hours	6 days

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				post MI. No specific sample requirement <u>Limitations:</u> Hydroxocobalamin may interfere with results.		
Beta HCG	Blood / SST	Beta-Human Chorionic Gonadotropin HCG	HCG	HCG is primarily used for the early detection and monitoring of pregnancy. <u>Specific sample requirement:</u> Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration. Note – this test cannot be added on to an existing sample due to potential cross contamination from other samples.	24 hours	Not available
Bicarbonate	Blood / SST	CO ₂	BIC	Bicarbonate can be used to assess and monitor acid-base and electrolyte status in conditions known to cause imbalance. <u>Specific sample requirements:</u> Sample to be received same day into the lab for processing due to the unstable nature of the analyte.	24 hours	Not available – unstable analyte
Bile Acids (serum)	Blood / SST	SBA	BA	Bile acids are used to aid diagnosis and monitoring of Intrahepatic Cholestasis of Pregnancy (ICP)	24 hours	2 days

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				No specific sample requirements.		
Bilirubin – Direct	Blood / SST	Conjugated Bilirubin	CBIL	<p>Conjugated bilirubin is often used to aid diagnosis of post hepatic jaundice, for example bile duct or liver blockage, hepatitis or trauma to the liver.</p> <p>No specific sample requirements</p>	24 hours	6 days
Bilirubin - Total	Blood / SST		TBIL	<p>Total bilirubin can be used to assess liver function especially bile duct obstruction or damage to the liver structures. Raised Bilirubin can also indicate increased red cell destruction.</p> <p>Part of liver profile code L</p> <p>No specific sample requirements.</p> <p><u>Limitations:</u> Hydroxycobalamin may cause falsely low results</p>	24 hours	6 days
Blood Film	Blood/ EDTA	Morphology	FILM	<p>Film reports are usually requested by the laboratory, or Haematology Consultants/Medical staff in response to abnormal FBC parameters, either to confirm automatically generated numerical blood parameters, or to look for clinically significant changes in blood cell morphology.</p> <p>Film reports can be requested in advance by requesting in ICE if specifically required.</p> <p>An interim report will be issued consisting of haemoglobin, platelet count, total white cell count,</p>	<p>24 hours - urgent films</p> <p>5 Working days- non urgent, and films requiring extended reporting</p>	24 hours

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				<p>automated neutrophil count and MCV whilst the blood film is processed. This interim report is issued on the understanding that it is subject to review / confirmation by film examination.</p> <p>Film reports do not constitute part of a normal FBC request.</p>		
Bone Marrow Aspirate	Slides	BMA		<p>Bone marrow aspirates are used to examine the bone marrow to diagnosis, stage or monitor a disease or condition involving bone marrow or blood cells.</p> <p>Test only requested / carried out by Haematology Consultants.</p>	7 days	N/A
C3	Blood / SST	Complement C3	C3	<p>Complement C3 & C4 are requested together and used to identify abnormalities, activation of the complement pathways or monitor chronic autoimmune diseases.</p> <p>No specific sample requirements</p>	72 hours	4 days
C4	Blood / SST	Complement C4	C4		72 hours	4 days
CA 125	Blood / SST	Ovarian tumour marker	CA125	<p>CA125 is used to aid detection of residual or recurrent ovarian carcinoma and monitoring in the management of cancer patients.</p> <p><u>Specific sample requirements:</u> Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p>	72 hours	5 days

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CA 153	Blood / SST	CA15-3 tumour marker	C153	<p>CA153 is used to aid the management of breast Cancer patients. Not to be used as an initial screening tool.</p> <p><u>Specific sample requirements:</u> Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p>	72 hours	5 days
CA 199	Blood / SST	CA19-9 tumour marker	C199	<p>CA199 is primarily used to aid the management of pancreatic cancer patients. Not to be used as an initial screening tool.</p> <p><u>Specific sample requirements:</u> Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p>	72 hours	6 days
Calcium (includes albumin)	Blood / SST		CA	<p>Calcium can be used to aid diagnosis and monitor a wide range of conditions relating to bones, heart, nerves and kidney and is primarily controlled by PTH, Vitamin D and Calcitonin.</p> <p>Adjusted calcium is calculated.</p> <p><u>Specific sample requirements:</u> Ideally sample should be taken un-cuffed.</p> <p><u>Limitations:</u> The interference of intravenously administered</p>	24 hours	6 days

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				gadolinium containing MRI (magnetic resonance imaging) contrast media was tested (Omniscan®, Optimark®). For Omniscan® no interference was observed at the therapeutic concentration, but there was interference at higher concentrations. For Optimark® interference was observed at therapeutic and higher concentrations.		
Calcium - Urine	24-hour urine collection		24CA	No specific sample requirements	72 hours	4 days
CEA	Blood / SST	Carcinoembryonic Antigen	CEA	<p>The main use of CEA is to monitor colorectal cancer treatment and aid in the staging and assessing of metastasis. Not to be used as an initial screening tool.</p> <p><u>Specific sample requirements:</u> Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p>	72 hours	6 days
Cholesterol	Blood / SST		LIP	<p>Cholesterol is used for screening of atherosclerotic risk and in the diagnosis and treatment of disorders involving elevated cholesterol levels as well as lipid and lipoprotein metabolic disorders.</p> <p>Part of lipid profile with Triglycerides, HDL, LDL</p> <p>No Specific sample requirements.</p>	24 hours	6 days

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				<u>Limitations:</u> Acetaminophen intoxications are frequently treated with N-Acetylcysteine. N-Acetylcysteine at the therapeutic concentration when used as an antidote and the Acetaminophen metabolite N-acetyl-p-benzoquinone imine (NAPQI) independently may cause falsely low results. Venipuncture should be performed prior to the administration of Metamizole. Venipuncture immediately after or during the administration of Metamizole may lead to falsely low results.		
Chloride	Blood / SST	CL	CL	Chloride is the major extracellular anion and serves to regulate the balance of extracellular fluid distribution. Similarly, to the other ions, common causes of decreased chloride include reduced dietary intake, prolonged vomiting and reduced renal reabsorption as well as some forms of acidosis and alkalosis. Increased chloride values are found in dehydration, kidney failure, some forms of acidosis, high dietary or parenteral chloride intake, and salicylate poisoning. No specific sample requirements	24 hours	6 days
Chloride – urine random	Urine / Yellow monovette	Urinary CL	UCL	No specific sample requirements	24 hours	6 days

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Clotting Screen	Blood / Sodium Citrate		CS	<p>Basic clotting tests to detect abnormalities of the coagulation system.</p> <p>Consists of Activated Partial Thromboplastin Time Ratio (APTT), Prothrombin Time (PT) and Clauss Fibrinogen (FIBC).</p> <p><u>Specific sample requirements:</u></p> <ul style="list-style-type: none"> • Must be filled to within +/- 10% of the fill line. • Must be less than 12 hours old. 	12 hours	12 hours
CK	Blood / SST	CPK, Creatine Phosphokinase	CK	<p>CK can be used to indicate damage to the myocardial cells, following injury to the myocardium i.e. acute MI.</p> <p>No Specific sample requirements.</p> <p><u>Limitations:</u> Hydroxycobalamin at therapeutic concentrations interferes with the test.</p>	24 hours	6 days
Cortisol	Blood / SST		COR	<p>Cortisol is used to aid diagnosis of conditions affecting the adrenal glands i.e., Cushing syndrome or Addison Disease, as part of the Dexamethasone suppression test or short synachten test as appropriate.</p> <p><u>Specific sample requirements:</u> Rest before sample collection. Generally, samples are best collected between 8-10am.</p>	72 hours	4 days

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				<p>Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p> <p><u>Limitations:</u> Pts. receiving fludrocortisone / prednisolone may increase cortisol level due to cross-reactivity.</p> <p>Pregnancy, contraceptives and estrogen therapy give rise to elevated cortisol concentrations.</p> <p>During metyrapon tests, 11-deoxycortisol levels are elevated. Falsely elevated cortisol values may be determined due to cross reactions.</p> <p>Patients suffering from 21-hydroxylase deficiency exhibit elevated 21-deoxycortisol levels and this can also give rise to falsely elevated cortisol results.</p>		
Creatinine (Enzymatic)	Blood / SST		CREA	<p>Creatinine is used to assess renal function.</p> <p>Part of renal profile code RE</p> <p>No Specific sample requirements.</p> <p><u>Limitations:</u> 2-Phenyl-1,3-indandion (phenindion) at therapeutic concentrations interferes with the assay. Dicynone (Etamsylate) at therapeutic</p>	24 hours	6 days

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				<p>concentrations may lead to falsely low results.</p> <p>N-ethylglycine at therapeutic concentrations and DL-proline at concentrations ≥ 1 mmol/L (≥ 115 mg/L) give falsely high results.</p> <p>Acetaminophen intoxications are frequently treated with N-Acetylcysteine. N-Acetylcysteine at a plasma concentration above 333 mg/L and the Acetaminophen metabolite N-acetyl-p-benzoquinone imine (NAPQI) independently may cause falsely low results.</p> <p>Venipuncture should be performed prior to the administration of Metamizole. Venipuncture immediately after or during the administration of Metamizole may lead to falsely low results. A significant interference may occur at any plasma Metamizole concentration.</p>		
Creatinine (Enzymatic) – Random Urine	Urine / Yellow monovette		UPCR or UACR	<p>Normally part of a Protein/Creatinine Ratio (UPCR) or Albumin/Creatinine ration (UACR) request.</p> <p>No Specific sample requirements.</p> <p><u>Limitations:</u> Dicynone (Etamsylate) at therapeutic concentrations may lead to falsely low results.</p> <p>High homogentisic acid concentrations in urine samples lead to false results.</p>	72 hours	6 days

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Creatinine (Enzymatic) – 24 hr urine	24-hour urine collection		24CRE	<p>No Specific sample requirements.</p> <p><u>Limitations:</u> Dicynone (Etamsylate) at therapeutic concentrations may lead to falsely low results.</p> <p>High homogentisic acid concentrations in urine samples lead to false results.</p>	72 hours	6 days
Creatinine Clearance	24-hour urine collection & blood / SST for creatinine.		CC	<p><u>Specific sample requirements:</u> Blood sample must be taken during the 24-hour collection period or within 2 hours of completing collection.</p> <p>See 24 hours urine Creatinine limitations.</p>	72 hours	Not available
CRP	Blood / SST	C-Reactive Protein	CRP	<p>CRP is a non-specific acute phase protein, that can be a marker for the presence and monitoring of infection and inflammation.</p> <p>No specific sample requirements</p>	24 hours	6 days
CSF Glucose	CSF collected in Fluoride Oxalate		CG (Select other)	<p>Cerebral Spinal Fluid (CSF) Glucose concentrations normally parallel blood glucose levels but there may be a 2–4 hour lag in the CSF level when compared to the blood level. CSF Glucose measurement is used for evaluation of meningitis, neoplastic involvement of meninges and other neurological disorders. CSF Glucose levels are usually normal in viral infections of the CNS.</p>	12 hours	Call lab on Ext 4331

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				<u>Specific sample requirements:</u> DO NOT transport via pod system		
CSF Lactate	CSF collected in Fluoride Oxalate		CLAC	Cerebral Spinal Fluid (CSF) Lactate concentrations normally parallel blood lactate levels, but in cases of biochemical alteration in the central nervous system (CNS), CSF lactate may change independently of blood levels. Raised levels of CSF lactate may occur with any clinical condition associated with reduced oxygenation of the brain and/or increased intracranial pressure or genetic lactic acidosis, intracranial haemorrhage, bacterial meningitis and epilepsy. <u>Specific sample requirements:</u> DO NOT transport via pod system	12 hours	24 hours
CSF Total Protein	CSF / Plain universal		CTP	Most Cerebral Spinal Fluid (CSF) protein originates by diffusion from plasma across the blood-brain barrier. Elevated levels occur as a result of increased permeability of the blood-brain barrier or with increased local synthesis of immunoglobulins. CSF Total Protein measurements are used in the diagnosis and treatment of conditions such as meningitis, brain tumours and infections of the central nervous system (CNS). <u>Specific sample requirements:</u> DO NOT transport via pod system	12 hours	6 days

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				<u>Limitations:</u> Blood in a CSF specimen invalidates the protein value.		
CSF Xanthochromia Screen	CSF / Plain Universal & Blood / SST		MISS – Put in clinical details XANT.	Xanthochromia is the term used to describe the pigmentation of cerebrospinal fluid (CSF) caused by varying concentrations of pigmented compounds such as oxyhaemoglobin and bilirubin, which are the by-products of red blood cell degradation. Analysis of CSF to detect the presence of bilirubin by spectrophotometry is most commonly used in the diagnosis of subarachnoid haemorrhage (SAH) in the presence of a normal head computed tomography (CT) scan. <u>Specific sample requirements:</u> DO NOT transport via pod system. MUST protect from light. Serum sample for Total Protein and bilirubin also required. Please provide Time of Onset at request. NOTE: This test is not currently within our scope for ISO15189 accreditation.	12 hours	Call Lab on Ext 4331
D-Dimer	Blood / Sodium Citrate		DDIM	The D-Dimer test is a measurement of D-dimer fragments in a patient's plasma. D-Dimer fragments are derived from the breakdown of the	12 hours	12 hours

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				<p>crosslinked Fibrin found in a thrombus. Elevated levels are associated with Venous Thrombo-Embolisms (VTEs) and therefore low levels of D-Dimer are often used as a negative predictor for VTEs. High D-Dimers, in conjunction with low fibrinogen, may indicate Disseminated Intravascular Coagulation (DIC).</p> <p><u>Specific sample requirements:</u> Must be filled to within +/- 10% of the fill line Must be less than 12 hours old.</p>		
Digoxin	Blood / SST		DIG	<p>Digoxin is a drug prescribed for heart failure, this test is used to monitor the therapeutic levels.</p> <p><u>Specific sample requirements:</u></p> <p>Sample timing: Pre-dose or at least 6 hours post dose.</p> <p>Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p> <p><u>Limitations:</u> Not suitable for patients on DIGIBAND</p> <p>Spironolactone was identified to cause falsely elevated digoxin values when exceeding 15mg/l</p>	24 hours	6 days

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				<p>Hydrocortisone was identified to cause falsely elevated digoxin values above (drug) levels of 10 mg/L.</p> <p>Uzara, nabumetone, pentoxifylline and canrenone were identified to cause falsely elevated digoxin values at concentrations of the recommended daily dose.</p>		
Erythrocyte Sedimentation Rate	Blood / EDTA	ESR	ESR	<p>A non-specific screen test in which patient's red cell's sediment in a vertical column over a period of 1-hour and is measured in mm/hour. In some systemic diseases, red cells lose their ability to repel each other and start to form clumps called rouleaux. These clumps sediment faster than normal cells and the ESR will be raised.</p> <p><u>Specific Sample Requirements:</u></p> <ul style="list-style-type: none"> • Sample must be less than 24 hours old. • Minimum volume 2mL 	24 hours	24 hours
Factor VIII	Blood / Sodium Citrate		F8A	<p>This test is an APTT-based assay measuring the amount of Factor 8 in a patient's sample.</p> <p>Factor 8 is a vital co-factor in the prevention of bleeding. Low levels may be inherited, as in the case of Haemophilia A, or acquired as a result of an autoimmune condition. Low levels can lead to bleeding, whilst high levels may contribute to thrombosis. Accurate quantitation is vital for optimal replacement therapy using blood concentrates, and/or the diagnosis of</p>	<p>1 working day</p> <p><3 hours for Haemophilia emergency</p>	4 hours

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				thrombophilia status. <u>Specific Sample Requirements:</u> <ul style="list-style-type: none"> • Must be filled to within +/- 10% of the fill line. • Must be frozen within 4 hours of sampling. Patients may need to be bled at DCH.		
Factor IX	Blood / Sodium Citrate		F9A	This test is an APTT-based assay measuring the amount of Factor 9 in a patient's sample. Factor 9 is a vital clotting factor in the prevention of bleeding. Low levels may be inherited, as in the case of Haemophilia B, or acquired, as a result of an autoimmune condition. Low levels can lead to bleeding. Accurate quantitation is vital for optimal replacement therapy using blood concentrates <u>Specific Sample Requirements:</u> <ul style="list-style-type: none"> • Must be filled to within +/- 10% of the fill line. • Must be frozen within 4 hours of sampling. Patients may need to be bled at DCH.	1 working day. <3 hours for Haemophilia emergency	4 hours
FBC	Blood / EDTA	Full Blood Count	FBC	The Full Blood Count (FBC) provides information about the numbers and types of cells in a patient's blood. Where the results indicate a need for a blood film to be processed an interim report will be issued consisting of haemoglobin, platelet count, total white cell count, automated neutrophil count and	24 hours (Excluding film report) See Blood film reporting.	24 hours

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				<p>MCV whilst the blood film is processed. This interim report is issued on the understanding that it is subject to review / confirmation by film examination.</p> <p><u>Specific Sample Requirements:</u></p> <ul style="list-style-type: none"> Maximum age 24 hours old at 4°C 		
Fe	Blood / SST	Iron studies	IS	<p>Iron studies are used to assess the body's current store of Iron. It can help to identify long term iron deficient anemia and iron overload.</p> <p>Includes UIBC to calculate transferrin saturation.</p> <p>No specific sample requirements</p> <p><u>Limitations:</u></p> <p>In patients treated with iron supplements or metal-binding drugs, the drug-bound iron may not properly react in the test, resulting in artificially low values.</p> <p>In the presence of high ferritin concentrations > 1200 µg/L the assumption that serum iron is almost completely bound to transferrin is not valid anymore. Therefore, such iron results should not be used to calculate Total Iron Binding Capacity (TIBC) or percent transferrin saturation (% SAT).</p>	72 hours	6 days

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Ferritin	Blood / SST		FER	<p>Ferritin is used to indicate the body's Iron reserves available to much (i.e. haemochromatosis) or too little (i.e. iron def. anemia).</p> <p><u>Specific sample requirements:</u></p> <p>Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p>	72 hours	6 days
Fibrinogen	Blood / Sodium Citrate		FIBC	<p>Measurement of the amount of fibrinogen in a patient's sample, using a Clauss APTT clotting assay. Low values can lead to serious bleeding problems. Accurate quantitation is vital for the investigation of bleeding, and the selection and monitoring of appropriate treatments.</p> <p><u>Specific sample requirements:</u></p> <ul style="list-style-type: none"> Must be filled to within +/- 10% of the fill line. 	12 hours	12 hours
Folate	Blood / SST	Folic Acid	FOL	<p>Folate is used to aid the diagnosis of anaemia (macrocytic) or neuropathy by evaluating the levels of folate. Folate can also be used to monitor the treatment for folate deficiency.</p> <p>Requested with Vitamin B12 – Code B12</p> <p><u>Limitations:</u></p> <p>Folate is significantly affected by Haemolysis.</p>	72 hours	2 days

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				<p>It is contraindicated to measure samples of patients receiving therapy with certain pharmaceuticals e.g. methotrexate or leucovorin, due to cross-reactivity of folate binding protein with these compounds.</p> <p>Assay is susceptible to interference from extremely high total protein concentrations.</p>		
Free T4	Blood / SST	Free Thyroxine	FT4	<p>FT4/TSH tests are variably indicated for investigation of possible hypo- or hyper-thyroidism, for monitoring of adequacy of thyroid hormone replacement, for monitoring of anti-thyroid treatment, for the investigation of the hypothalamic-pituitary-thyroid axis and for management of thyroid carcinoma.</p> <p>TSH provides the frontline investigation of thyroid disease with FT4 being reflexed by the laboratory as appropriate based on the TSH result No specific sample requirements.</p> <p><u>Limitations:</u></p> <p>The test is not suitable for patients receiving treatment with lipid-lowering agent containing D-T4.</p> <p>Auto-antibodies to thyroid hormones can interfere with this assay.</p> <p>Any influence that might affect the binding</p>	72 hours	6 days

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				<p>behavior of the binding proteins can alter the result of the fT4 tests (e.g. drugs, NTIs (Non-Thyroid-Illness) or patients suffering from FDH (Familial Dysalbuminemic Hyperthyroxinemia)).</p> <p>The drugs furosemide, carbamazepine, phenytoin and levothyroxine sodium (L-T4, synthetic levothyroxine¹²) caused elevated fT4 recovery at the daily therapeutic concentration.</p>		
FSH	Blood / SST	Follicle Stimulating Hormone	FSH	<p>FSH can be used to evaluate the function of your pituitary gland, which regulates the hormones that control your reproductive system.</p> <p>No specific sample requirements.</p>	72 hours	6 days
G6PD	EDTA x 2	Glucose-6-Phosphate Dehydrogenase Deficiency (G-6-PDH)	G6PD	<p>For the assessment of the red cell enzyme Glucose-6-Phosphate Dehydrogenase (G6PD). Includes a screening test performed at DCH.</p> <p>The screening test can only differentiate deficient from not deficient. More accurate quantitation requires sending a sample to a reference laboratory and not suitable for the immediate management of a patient. Only samples that show a screening test result of deficient or intermediate are sent away for quantitation.</p> <p><u>Specific Sample Requirements:</u></p> <ul style="list-style-type: none"> • 2 x EDTA samples required 	Urgent screen same day	24 hours If >24hrs call lab on Ext 4331.

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				<ul style="list-style-type: none"> FBC and Reticulocyte count needed 		
Gentamicin	Blood / SST		GENT	<p>Gentamicin is an aminoglycoside antibiotic used in the treatment of infections caused by E. coli, Klebsiella, Enterobacter, Proteus mirabilis, Pseudomonas aeruginosa, Serratia, Staphylococcus aureus, Staphylococcus epidermidis and other microorganisms.</p> <p><u>Specific sample requirements:</u> Please give dose regimen and time of last dose.</p> <p>Blood taken from lines used to administer antibiotics may give erroneous results.</p> <p>Refer to BNF or trust policies for interpretation.</p> <p><u>Limitations:</u> Patient samples containing sisomicin will elevate gentamicin results</p>	24 hours	6 days
Gamma GT	Blood / SST	Gamma glutamyl transferase GGT	GGT	<p>GGT is used in the diagnosis and monitoring of hepatobiliary diseases. Enzymatic activity of GGT is often the only parameter with increased values when testing for such diseases and is one of the most sensitive indicators known. GGT is also a sensitive screening test for occult alcoholism. Elevated GGT activities are found in the serum of patients requiring long-term medication with phenobarbital and phenytoin.</p> <p>No specific sample requirements</p>	24 hours	6 days

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				<u>Limitations:</u> Elevated GGT activities are found in the serum of patients requiring long-term medication with phenobarbital and phenytoin.		
Glucose – Random	Blood / Fluoride Oxalate		G	To determine whether or not blood glucose level is within normal ranges; to screen for, diagnose, and monitor diabetes, and to monitor for the presence of hypoglycaemia (low blood glucose) and hyperglycaemia (high blood glucose). No specific sample requirements.	24 hours	3 days
Glucose – Fasting	Blood / Fluoride Oxalate		GF	<u>Specific sample requirements:</u> Fasting for 12 hours prior to the test (nothing to eat or drink except water).	24 hours	3 days
HbA1c	Blood / EDTA NOT able to use sample for other tests.	A1c	T1C	Patients with a Hb variant will require their results to be interpreted with caution and cannot be used for diagnosis. Sample may require alternative testing (Total Glycated Hb) at Poole if the sample is not suitable for HPLC. <u>Specific sample requirements:</u> Separate sample is required <u>Limitations:</u> This test is not suitable for patients with an altered red cell turnover, please consider Fructosamine or	72 hours	6 days

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				contact the laboratory for advice.		
HDL	Blood / SST	High Density Lipoprotein Cholesterol	LIP	<p>Monitoring of HDL-cholesterol in serum or plasma is of clinical relevance as the HDL-cholesterol concentration is important in the assessment of atherosclerotic risk.</p> <p>Part of a Lipid Profile with Cholesterol, Triglycerides, LDL.</p> <p>No specific sample requirements.</p> <p><u>Limitations:</u> Interference from Triglycerides above 13.7mmol/l.</p> <p>Elevated concentrations of free fatty acids and denatured proteins may cause falsely elevated HDL-cholesterol results.</p> <p>Abnormal liver function affects lipid metabolism; consequently, HDL and LDL results are of limited diagnostic value.</p> <p>Metamizole: Venipuncture should be performed prior to the administration of metamizole. Venipuncture immediately after or during the administration of metamizole may lead to falsely low results.</p> <p>Acetaminophen intoxications are frequently treated with N-acetylcysteine. N-acetylcysteine at the</p>	24 hours	6 days

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				therapeutic concentration when used as an antidote and the acetaminophen metabolite N-acetyl-p-benzoquinone imine (NAPQI) independently may cause falsely low HDL-cholesterol results.		
Heparin Monitoring	Blood / Sodium Citrate		HEPR	<p>Test for monitoring unfractionated heparin anticoagulant therapy. Based on an APTT clotting test with results expressed as a ratio of patient's clotting time divided by a mean normal time – the APTT ratio.</p> <p><u>Specific Sample Requirements:</u></p> <ul style="list-style-type: none"> • Must be filled to within +/- 10% of the fill line • Must be less than 12 hours old 	12 hours	12 hours
HS-TROP T	Blood / SST	High Sensitive Troponin T TnT	TROP	<p>TnT (Trop T) originating exclusively from the myocardium clearly differs from skeletal muscle TnT. As a result of its high tissue-specificity, cTnT is a cardio-specific, highly sensitive marker for myocardial damage. Cardiac troponin T increases rapidly after acute myocardial infarction (AMI).</p> <p>No specific sample requirements.</p> <p><u>Limitations:</u> Haemolysis interferes with this assay.</p>	24 hours	24 hours
IGA	Blood / SST	Immunoglobulin A	IGA	<p>Requestable separately to support IgA Tissue Transglutaminase Ab (TTG).</p> <p>No specific sample requirements</p>	72 hours	6 days

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IGS	Blood / SST	Immunoglobulin G,M,A	IGS	<p>Immunoglobulins help to evaluate the immune system status; to detect and monitor an excess or deficiency in one or more classes IgA, IgG or IgM.</p> <p>No specific sample requirements</p>	72 hours	6 days
Lactate	Blood / Fluoride Oxalate or Fluoride EDTA	Lactic Acid	LAC	<p>Lactate measurements evaluate the acid-base status and are used in the diagnosis and treatment of lactic acidosis (abnormally high acidity in the blood). Lactate also forms part of the Sepsis pathway.</p> <p>No specific sample requirements</p> <p><u>Limitations:</u> Haemolysis interferes with this analysis.</p> <p>Dicynone (Etamsylate) at therapeutic concentrations may lead to falsely low results.</p> <p>Acetaminophen intoxications are frequently treated with N-Acetylcysteine. N-Acetylcysteine at a plasma concentration above 1497 mg/L and the Acetaminophen metabolite N-acetyl-p-benzoquinone imine (NAPQI) independently may cause falsely low results.</p> <p>Venipuncture should be performed prior to the administration of Metamizole. Venipuncture immediately after or during the administration of</p>	24 hours	6 days

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				<p>Metamizole may lead to falsely low results. A significant interference may occur at any plasma Metamizole concentration.</p> <p>Calcium dobesilate causes artificially low lactate results.</p> <p>Glycolate, a metabolite of ethylene glycol, causes a positive interference</p>		
LDH	Blood / SST	Lactate Dehydrogenase	LDH	<p>LDH is an enzyme, which is widespread in all cells of the body. LDH is a non-specific indicator of disease and is raised in numerous processes involving tissue damage.</p> <p>No specific sample requirements.</p> <p><u>Limitations:</u> Samples with any degree of haemolysis are unsuitable for analysis.</p>	24 hours	4 days
LH	Blood / SST	Luteinising Hormone	LH	<p>LH can be used to evaluate the function of your pituitary gland, which regulates the hormones that control your reproductive system</p> <p><u>Sample specific requirements:</u> State day in cycle.</p> <p>Samples should not be taken from patients</p>	72 hours	6 days

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				receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.		
Lithium	Blood / SST	LI	LI	<p>Lithium is used in the treatment of bipolar disease as a modulator of neurotransmission. Levels are used for routine monitoring, compliance, response to lithium or in suspected toxicity.</p> <p>Lithium can interfere with thyroid function and patients on this medication should be regularly monitored with thyroid function being checked before commencing the drug and then every 6 months thereafter along with renal function and calcium levels.</p> <p><u>Sample specific requirements:</u> Take sample 12 hours post dose.</p>	24 hours	6 days
LUPUS	Blood / Sodium Citrate x4	Lupus anticoagulant screen	LUPUS	<p>A panel of tests to detect Lupus anticoagulants and antiphospholipid antibodies in a patient's blood. Panel consists of plasma-based clotting tests (Dilute Russel Viper Venom DRVVT and Lupus sensitive APTT) to detect the presence of Lupus anticoagulants. Plus serum -based tests for anticardiolipin and anti-B2 glycoprotein antibodies. The antibody tests require 1 serum sample.</p> <p><u>Specific Sample Requirements:</u></p>	14 days (ACLA 5 weeks).	4 hours

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				<ul style="list-style-type: none"> • Must be filled to within +/- 10% of the fill line • Lupus test must be frozen within 4 hours of sampling • Includes send away tests anti-cardiolipins and anti-beta2-glycoprotein 1 antibodies. <p>Patient may need to be bled at DCH.</p>		
Magnesium	Blood / SST	MG	MG	<p>Magnesium is the second most abundant intracellular cation in the body and as a co-factor for many enzyme systems plays a crucial role in many processes. Levels can aid investigation to abnormal potassium and calcium; and be used to diagnosis or monitoring hypomagnesemia or hypermagnesemia.</p> <p>No specific sample requirements.</p> <p><u>Limitations:</u> Haemolysis interferes with this assay</p>	24 hours	6 days
Malaria Screen	Blood / EDTA		MP	<p>To detect the presence of malarial parasites in a patient's blood. Testing consists of two parts:</p> <ol style="list-style-type: none"> 1. A rapid ICT screening test to detect specific malarial antigens in the blood (Plasmodium falciparum, plus a non-specific pan-plasmodium). This gives a fast result but has limited sensitivity to some species and low levels of parasites. 	12 hours for rapid screen. 24 -48 hours for full microscopy report. If concerned,	Contact the lab on Ext 4382.

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				<p>2. A more thorough microscopic examination by 2 qualified BMS' to determine species, developmental stages, and parasite load (parasitaemia). A more sensitive test but requires special staining and careful film examination.</p> <p>In all cases a negative result does not necessarily exclude malaria and should be repeated if clinical symptoms persist. Further samples may be required to be sent to the reference laboratory (London) for DNA PCR testing</p>	please contact haematology laboratory 4382	
Urinary Micro-albumin	Urine / Yellow monovette	MALB	MALB	<p>Microalbumin can be used as a screen for kidney disease, often in patients with diabetes or hypertension.</p> <p>If the result is >400 a urine Protein will be reflexed.</p> <p>No specific sample requirements.</p>	72 hours	6 days
NT-Pro BNP	Blood / SST	Pro BNP	BNP	<p>NT-Prob BNP aids in the diagnosis of suspected congestive heart failure (CHF) and detection of mild forms of cardiac dysfunction. The test can be used in the assessment of CHF severity in diagnosed patients.</p> <p>No specific sample requirements</p>	24 hours	6 days
Oestradiol	Blood / SST	Estradiol, E2	OEST	<p>Estrogens are responsible for the development of the secondary female sex characteristics. In women, the test can be used to investigate unexplained abnormal menstrual cycles, abnormal</p>	72 hours	2 days

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				<p>or heavy bleeding, infertility problems, symptoms of menopause, or any other hormonal alterations. In men it can be used in the investigation of gynaecomastia.</p> <p><u>Specific sample requirements:</u></p> <p>Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p> <p><u>Limitations:</u></p> <p>Erroneous test results may be obtained from samples taken from patients who have been exposed to vaccines containing rabbit serum or when keeping rabbits as pet animals.</p> <p>Due to the risk of cross reactivity, this assay should not be used when monitoring Estradiol levels in patients being treated with Fulvestrant.</p> <p>Steroid drugs may interfere with this test.</p>		
Osmolality - Serum	Blood / SST		OSS	<p>Osmolality is used to help investigate the cause of hyponatremia and in the calculation for osmolal gap in suspected poisoning. A normal osmolality with presence of significant hyponatraemia may indicate pseudhyponatraemia.</p> <p><u>Specific sample requirements:</u></p> <p>Haemolysed samples are unsuitable for analysis.</p>	24 hours	3 days

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				<p>Li-heparin samples must NOT be used.</p> <p>Water deprivation tests must be communicated to the laboratory before being started where possible.</p>		
Osmolality - Urine	Urine / Plain Universal		OSU	<p>Urine osmolality can be used to measure the kidney's ability to concentrate urine and aid investigation to abnormal sodium results or abnormalities of ADH actions.</p> <p>No specific sample requirements.</p>	24 hours	3 days
IM – Infectious Mononucleosis (Paul Bunnell test)	Blood / SST	IM Screen, Monospot GF	IM	<p>A simple serological test for patients with suspected Epstein Barr virus infections – Infectious Mononucleosis (IM). The test looks for the associated heterophile antibody often found in patients with Infectious Mononucleosis. The test is based on the agglutination of sensitised latex particles coated with purified Paul Bunnell antigen. The test only detects the presence of heterophile antibody, so full EBV testing is always recommended.</p> <p>Note: This can be done on EDTA within 24hours.</p>	72 hours	7 days
Paracetamol	Blood / SST	Acetaminophen	PAR	<p>Paracetamol is used to identify and assess the level of paracetamol in patients suspected with paracetamol overdose.</p> <p>In PS profile with Salicylate.</p>	24 hours	3 days

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				<u>Specific sample requirements:</u> Sample should be collected at 4 hours or more after suspected overdose. <u>Limitations:</u> Haemolysis interferes with analysis Amitriptyline and Imipramine showed a significant negative interference ($\geq 10\%$).		
Phosphate	Blood / SST	PO4	PO4	Phosphate evaluates the level of phosphate to aid investigation to into conditions known to cause abnormal phosphate levels. Levels can also be used when investigating abnormal calcium, PTH or vitamin D levels. Available in Bone Profile (BP) No specific sample requirements <u>Limitations:</u> Haemolysis interferes with this assay. Phospholipids contained in liposomal drug formulations (eg AmBisome) may be hydrolyzed in the test due to the acidic reaction pH and thus lead to elevated phosphate results.	24 hours	4 days
Phosphate - Urine	24-hour urine collection	Urine PO4	PEU	No specific sample requirements.	72 hours	6 days

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Potassium	Blood / SST	K	K	<p>Potassium is the major intracellular cation and is critical to neural and muscle cell activity. Some causes of decreased potassium levels include reduced intake of dietary potassium or excessive loss of potassium from the body due to diarrhea, prolonged vomiting or increased renal excretion. Increased potassium levels may be caused by dehydration or shock, severe burns, diabetic ketoacidosis, and retention of potassium by the kidney.</p> <p>Part of renal profile code RE.</p> <p><u>Specific sample requirements:</u> Samples where centrifugation does not take place within 6 hours will be subject to potential false elevation of results.</p> <p>Do not store uncentrifuged sample in the fridge.</p> <p><u>Limitations:</u> Haemolysed samples not suitable for analysis</p>	24 hours	6 days if sample has been spun or <8hrs.
Potassium - urine	Urine / Yellow monovette	Urinary K	UEL	<p>The test profile includes Urine Sodium.</p> <p>No specific sample requirements.</p>	24 hours	6 days
Progesterone	Blood / SST	Day 21 Progesterone	PRGS	<p>Progesterone is used as a marker of ovulation in the investigation of infertility. Failure of progesterone levels to increase in the latter phase of the menstrual cycle indicates an anovulatory</p>	72 hours	5 days

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				<p>cycle or corpus luteum inadequacy.</p> <p><u>Specific sample requirements:</u> Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p>		
Procalcitonin	Blood / EDTA	PCT	PCT	<p>PCT is produced following pro-inflammatory stimulation, particularly systemic bacterial infection. PCT is a biomarker of infections and can be used to guide the use of antibiotics requirements and the patients response.</p> <p>See trust guidelines for Interpretation</p> <p><u>Specific sample requirements:</u> Requires separate sample</p> <p><u>Limitations:</u> PCT levels can be increased in certain situations without infectious origin. These include, but are not limited to:</p> <ul style="list-style-type: none"> ▪ prolonged or severe cardiogenic shock ▪ prolonged severe organ perfusion anomalies ▪ small cell lung cancer or medullary C-cell carcinoma of the thyroid ▪ early after major trauma, major surgical intervention, severe burns ▪ treatments which stimulate the release of pro-inflammatory cytokines 	24 hours	2 days

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Prolactin	Blood / SST	PRL	PROL	<p>Prolactin levels are measured when patients have a suspected pituitary tumour (prolactinoma), and in the investigation of oligomenorrhoea, amenorrhoea, galactorrhoea or infertility in women and hypogonadism, impotence, and infertility in men.</p> <p><u>Specific sample requirements:</u> Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p>	72 hours	24 hours
PTH	Blood / EDTA	Parathormone	PTH	<p>Parathyroid hormone (PTH) is secreted by the parathyroid glands and plays an important role in calcium homeostasis. PTH analysis is used in the investigation of abnormal calcium levels, to distinguish between parathyroid and non-parathyroid causes; in monitoring renal patients and in assessing patients immediately post parathyroidectomy (or thyroidectomy).</p> <p><u>Specific sample requirements:</u> Separate sample required.</p> <p><u>Limitations:</u> Haemolysis interferes with this assay.</p>	72 hours	3 days

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PSA	Blood / SST	Prostate Specific Antigen	PSA	<p>Total Prostate Specific Antigen (PSA) is used in the monitoring of therapy /management of patients with prostate cancer. While PSA has been shown to be raised in prostatic cancer, it may not always detect the disease in its early stages.</p> <p>No specific sample requirements</p>	72 hours	5 days
Retics	Blood / EDTA	Reticulocyte Count	RETIC	<p>A measure of immature red cells (Reticulocytes) in a patient's blood. Reticulocytes contain residual ribosomal RNA which can be detected by differential staining and quantified by flow cytometry. Increased numbers can indicate increased red cell turnover, whilst low numbers can indicate reduced red cell production (erythropoiesis) in the bone marrow.</p> <p>Test requires FBC.</p>	24 hours	24 hours
Rheumatoid Factor	Blood / SST	RF	RF	<p>RF can be used as a bio marker for Rheumatoid Arthritis (RA) but is not diagnostic and can also be seen in up to 10% of the normal population.</p> <p>No specific sample requirements</p>	72 hours	6 days
Salicylate	Blood / SST	Aspirin	SAL	<p>Salicylate levels can be used to identify possible salicylate overdose in patients.</p> <p>In PS Profile with Paracetamol.</p> <p><u>Specific sample requirements:</u></p>	24 hours	4 days

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				Ideally sample should be taken approx. 4 hours post ingestion.		
SHBG	Blood / SST	Sex Hormone Binding Globulin	SHBG	<p>SHBG levels are indicated in the investigation of hirsutism in women and for infertility, reduced libido or erectile dysfunction in men, particularly when androgen levels are within normal ranges and this does not fit the clinical picture.</p> <p>Increased SHBG levels can be seen in anorexia, pregnancy, ageing, growth hormone deficiency, androgen deficiency, hyperthyroidism, liver disease, hyperprolactinaemia, active porphyria and also with oestrogens.</p> <p>Decreased SHBG levels can be seen in obesity, hyperinsulinaemia, hypothyroidism and growth hormone excess, as well as with glucocorticoids, androgens, progestins. It can also be familial.</p> <p><u>Specific sample requirements:</u> Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration.</p>	72 hours	3 days
Sickle Screen	Blood /EDTA		SCKL	<p>A rapid screening test to determine the presence of Sickle haemoglobin (HbS) in a patient's blood. The test is based on the insolubility of Sickle haemoglobin in a reduced oxygen environment. Not suitable for neonates or children under 6 months old.</p> <p>Positive results require confirmation/quantitation by</p>	72 hours	24 hours

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				haemoglobin electrophoresis and possible genetic testing.		
Sodium	Blood / SST	Na	NA	<p>Sodium is the major extracellular cation and functions to maintain fluid distribution and osmotic pressure. Some causes of decreased levels of sodium includes prolonged vomiting or diarrhea, diminished reabsorption in the kidney and excessive fluid retention. Common causes of increased sodium include excessive fluid loss, high salt intake and increased kidney reabsorption.</p> <p>Part of renal profile code RE.</p> <p>No specific sample requirements</p> <p><u>Limitations:</u> Gross haemolysis will falsely lower the results.</p> <p>Elevated protein-/lipid levels may contribute to pseudohyponatremia.</p>	24 hours	6 days
Sodium - urine	Urine / Yellow monovette	Urinary Na	UEL	<p>The test profile includes Urine Sodium.</p> <p>No specific sample requirements.</p>	24 hours	6 days
Testosterone	Blood / SST	Androgens	TEST	Testosterone is an androgenic steroid hormone, secreted mainly by the testes in males, but also from the adrenal cortex and the ovaries (in females).	72 hours	6 days

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				<p>Testosterone levels are indicated in investigation of:-</p> <ul style="list-style-type: none"> • Amenorrhoea, hirsutism or signs of virilisation in females • Testicular failure/erectile dysfunction in males • Possible pituitary/hypothalamic disease in adult males • Precocious or delayed puberty in male children • Monitoring of androgen ablation therapy in treatment of prostate cancer <p><u>Specific sample requirements:</u> Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last biotin administration</p> <p><u>Limitations:</u> Haemolysis interferes with this analysis.</p> <p>A strong interaction with Nandrolone (INN international nonproprietary name) was found. Do not use samples from patients under Nandrolone treatment.</p>		
Thrombin Time	Blood / Sodium Citrate		TT	<p>Thrombin time is a test designed for the assessment of fibrin formation. The thrombin time remains normal in deficiencies of factor XIII.</p> <p><u>Specific sample requirements:</u></p> <ul style="list-style-type: none"> • Must be filled to within +/- 10% of the fill line • Must be less than 12 hours old. 	12 hours	12 hours

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Thrombophilia Screen	Blood / Sodium Citrate x5 Blood / SST x 1		TS	See information in sendaway section below. Lupus assay is performed at DCH.	14 days for 'in house' tests, 6 weeks for send aways.	Not available
Theophylline	Blood / SST	Aminophylline, Phyllocontin	THEO	<p>Theophylline is an oral bronchodilator with a narrow therapeutic window, used in the treatment of conditions such as asthma and chronic obstructive pulmonary disease (COPD). Theophylline levels are useful for optimising dosing. Monitoring is also valuable in confirming a diagnosis of theophylline toxicity and in managing the overdosed patient</p> <p><u>Specific sample requirements:</u> Peak 4-6hrs for slow-release oral preparation.</p> <p>Total Protein can cause interference at concentrations of 12g/dl or above.</p> <p>Triglycerides can cause interference at concentrations of 11.3mmol/l or above. Rheumatoid factors can cause interference at concentrations of 1000IU/ml or above.</p> <p>Theobromine concentrations of 20ug/ml or above (toxic levels) may results in a negative bias of >10%.</p>	24 hours	6 days

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Total Protein	Blood / SST		TP	<p>Plasma proteins are synthesized predominantly in the liver, plasma cells, lymph nodes, the spleen and in bone marrow. In the course of disease, the total protein concentration and the percentage represented by individual fractions can significantly deviate from normal values. Routinely forms part of a liver function test.</p> <p>Part of liver profile code L</p> <p><u>Limitations:</u> Haemolysis interferes with this assay</p>	24 hours	6 days
Urinary Protein	Urine / Yellow monovette		UPCR	<p>Normally part of a Protein/Creatinine Ratio (UPCR).</p> <p>No Specific sample requirements.</p> <p><u>Limitations:</u> Haemolysis interferes with this assay.</p> <p>Levodopa, methyldopa and Na2-cefoxitin cause artificially high total protein results at therapeutic drug levels.</p> <p>Phenazopyridine and calcium dobesilate causes artificially low protein results at the therapeutic drug level.</p> <p>High levels of homogentisic acid can be found in urine of patients with the rare genetic disorder Alkaptonuria.¹¹ Homogentisic acid in urine</p>	72 hours	6 days

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				<p>samples at concentrations > 0.6 mmol/L can cause false results.</p> <p>Patient samples containing > 8 g/L of organically bound iodine from Radiopaque media (e.g. Hexabrix) may have falsely elevated results.</p>		
Triglycerides	Blood / SST	Trigs	LIP	<p>The determination of triglycerides is utilized in the diagnosis and treatment of patients having diabetes mellitus, nephrosis, liver obstruction, lipid metabolism disorders and numerous other endocrine diseases</p> <p>In Lipid Profile with Cholesterol, HDL & LDL.</p> <p>No specific sample requirements.</p> <p><u>Limitations:</u> Endogenous unesterified glycerol in the sample will falsely elevate serum triglycerides.</p> <p>Dicynone (Etamsylate) at therapeutic concentrations may lead to false-low results.</p> <p>Acetaminophen intoxications are frequently treated with N-Acetylcysteine. N-Acetylcysteine at a plasma concentration above 166 mg/L and the Acetaminophen metabolite N-acetyl-p-benzoquinone imine (NAPQI) independently may cause falsely low results.</p> <p>Venipuncture should be performed prior to the</p>	24 hours	6 days

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				administration of Metamizole. Venipuncture immediately after or during the administration of Metamizole may lead to falsely low results. A significant interference may occur at plasma Metamizole concentrations above 0.05 mg/mL.		
TSH	Blood / SST	Thyroid Stimulating Hormone, Thyrotropin	TSH	<p>TSH/FT4 are variably indicated for investigation of possible hypo- or hyper- thyroidism, for monitoring of adequacy of thyroid hormone replacement, for monitoring of anti-thyroid treatment, for the investigation of the hypothalamic-pituitary-thyroid axis and for management of thyroid carcinoma.</p> <p>TSH provides the frontline investigation of thyroid disease with FT4 being reflexed by the laboratory as appropriate based on the TSH result.</p> <p>No specific sample requirements</p>	72 hours	6 days
Urate	Blood / SST	Uric Acid	UA	<p>Uric acid is measured in patients with inflammatory arthropathies, although not all patients with hyperuricaemia have (or will develop) gout. The diagnosis depends on the demonstration of synovial fluid uric acid crystals in the presence of inflammatory cells. Uric acid is also used for the investigation/monitoring of pre-eclampsia and sometimes following chemotherapy or radiation treatment.</p> <p>Elevated uric acids levels will be seen in renal failure. Raised levels are also seen with excessive use of alcohol, starvation, a high-protein diet and strenuous exercise. Elevated levels are also seen</p>	24 hours	6 days

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				<p>in the rare inherited disorder, Lesch-Nyhan syndrome, Low uric acid levels may indicate severe liver disease, low protein diet, heavy metal poisoning, Wilson's disease or some type of cancer.</p> <p><u>Limitations:</u> Calcium dobesilate causes artificially low uric acid results.</p> <p>Dicynone (Etamsylate) at therapeutic concentrations may lead to false-low results.</p> <p>Uricase reacts specifically with uric acid. Other purine derivatives can inhibit the uric acid reaction.</p> <p>Acetaminophen intoxications are frequently treated with N-Acetylcysteine. N-Acetylcysteine at the therapeutic concentration when used as an antidote and the Acetaminophen metabolite N-acetyl-p-benzoquinone imine (NAPQI) independently may cause falsely low results.</p> <p>Venipuncture should be performed prior to the administration of Metamizole. Venipuncture immediately after or during the administration of Metamizole may lead to falsely low results.</p>		
Urate - Urine	24-hour urine collection	Urine Uric Acid	UAEU	High uric acid levels in the urine are seen with gout, multiple myeloma, metastatic cancer,	72 hours	Not available

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				<p>leukaemia and a diet high in purines. Low urine uric acid levels may be seen with kidney disease and chronic alcohol use</p> <p><u>Specific sample requirements:</u> Must reach the laboratory same day and not be refrigerated.</p> <p><u>Limitations:</u> Calcium dobesilate, Levodopa and methyldopa can all cause artificially low uric acid results.</p> <p>High homogentisic acid concentrations in urine samples lead to false results.</p> <p>Dicynone (Etamsylate) at therapeutic concentrations may lead to false-low results.</p>		
UIBC	Blood / SST	Unsaturated Iron Binding Capacity	IS	<p>Iron studies are used to assess the body's current store of Iron. It can help to identify long term iron deficient anemia and iron overload.</p> <p>Includes Iron to calculate Transferrin Saturation.</p> <p>No specific sample requirements.</p> <p><u>Limitations:</u> Oxytetracycline causes artificially high UIBC values at the tested drug level</p> <p>Any deferoxamine concentration interferes with the UIBC assay.</p>	72 hours	6 days

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				In the presence of high ferritin concentrations > 1200 µg/L the assumption that serum iron is almost completely bound to transferrin is not valid anymore. Therefore, such iron results should not be used to calculate Total Iron Binding Capacity (TIBC) or percent transferrin saturation (% SAT).		
Urea	Blood / SST		U	<p>Urea is used along with other creatinine and EGFR to assess renal function.</p> <p>In Renal profile code RE</p> <p>No specific sample requirements.</p> <p><u>Limitations:</u> Ammonium ions may cause erroneously elevated results</p>	24 hours	6 days
Urea - Urine	Urine / Yellow monovette		UU	<p>No specific sample requirements</p> <p><u>Limitations:</u> Bacterial growth in the specimen and high atmospheric ammonia concentrations as well as contamination by ammonium ions may cause erroneously elevated results</p>	72 hours	6 days
Vancomycin	Blood / SST	Vanc	VANC	Vancomycin is a complex glycopeptide antibiotic, which is used for the treatment of infections caused by Gram-positive organisms,	24 hours	6 days

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				<p>primarily methicillin resistant Staphylococcus aureus (MRSA), coagulase-negative Staphylococci, Streptococci or Enterococci, particularly in patients allergic to β-lactams.</p> <p><u>Specific sample requirements:</u> Please give dose regimen and time of last dose</p> <p>Blood taken from lines used to administer antibiotics may give erroneous results.</p> <p>Refer to BNF or trust policies for interpretation</p>		
Warfarin Monitoring	Blood / Sodium Citrate	INR	DINR	<p>Test for monitoring warfarin anticoagulant therapy. Based on the PT clotting test with results expressed as the International Normalised Ratio, or INR.</p> <p><u>Specific sample requirements:</u></p> <ul style="list-style-type: none"> • Must be filled to within +/- 10% of the fill line • Must be less than 12 hours old. 	12 hours	12 hours
Vitamin B12	Blood / SST	Cobalamin	B12	<p>B12 is used when there is a suspected vitamin B12 deficiency (macrocytosis, anaemia, neurological deficit, glossitis or clinical condition known to cause B12 deficiency)</p> <p>Requested with Folate (code FOL)</p> <p><u>Specific sample requirements:</u> Samples should not be taken from patients receiving therapy with high biotin doses (i.e. > 5 mg/day) until at least 8 hours following the last</p>	72 hours	2 days

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				biotin administration. <u>Limitations:</u> Samples with extremely high total protein concentrations (hyperproteinemia) are not suitable for use in this assay. Haemolysed samples are unsuitable for analysis.		
Vitamin D	Blood / SST	25 Hydroxy Vitamin D	VITD	Vitamin D can be used to investigate a problem related to bone metabolism or parathyroid function, possible vitamin D deficiency, malabsorption, before commencing specific bone treatment and to monitor some patients taking vitamin D. No specific sample requirements.	72 hours	4 days




Please note: Where 24 hours is stated, this is the maximum for outpatient work. Inpatient work will be turned around the same day where possible.

Sendaway Tests (Including University Hospitals Dorset (UHD))




For any test not listed below, please contact the Laboratory for further information- not all available sendaway tests are listed below.

Turn around times (TATs) are based on working days (Mon-Fri).




Test Name	Sample type / Tube type	Alternative Name	Lab Code	Test Information	TATs
ACE	Blood / SST	Angiotensin Converting Enzyme	ACE	Sent to UHD for analysis	14 days

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A.C.R.A	Blood / SST	Acetyl Choline Receptor Antibodies	ACRA	Sent to UHD for analysis	14 days
A1AT	Blood / SST	Alpha 1 Antitrypsin	A1AT	Sent to UHD for analysis A1AT Phenotype is reflexed on low results and the request sent to Sheffield.	14 days
ACTH	Blood / EDTA	Adrenocorticotrophic hormone	ACTH	Sample must arrive at the lab within 6 hours of collection. Sent to Southampton for analysis	15 days
ADAMTS13	Blood / sodium Citrate			Test for the metallo-enzyme ADAMTS13. Low levels of this enzyme can lead to the serious condition Thrombotic Thrombocytopenic Purpura (TTP). This test helps distinguish TTP from other micro-angiopathic haemolytic anaemias. This test can only be requested with haematology consultant approval. Specific sample requirements: <ul style="list-style-type: none"> • 2 x citrate samples (Must be filled to within +/- 10% of the fill line) • 1x serum sample • Please contact haematology laboratory on 4382 prior to taking sample 	5 days
ANA	Blood / SST	Connective tissue anti-nuclear ANA screen	ANA	Part of the CTD pathway	10 days
ANCA (MPO & PR3)	Blood / SST			Sent to UHD for analysis	10 days

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Aldosterone Renin Ratio	Blood / EDTA		ALDOR	Patient will need to be bled at DCH. Transport to the lab within 15mins. Sent to Southampton for analysis	15 days
Amino Acids	Blood / SST		AA	Sent to Southampton for analysis	14 days
Anti-Mullerian Hormone	Blood / SST		AHM	Patient may need to be bled at DCH Must be spun and separated within 2 hours of sampling. Sent to Manchester for analysis.	15 days
B2M	Blood / SST	B2 Microglobulin	B2M	Sent to UHD for analysis	10 days
Carbamazepine	Blood / SST	Tegretol	CARB	For trough level take pre-dose for routine monitoring Sent to UHD for analysis	2 days
Caeruloplasmin	Blood / SST		CAER	Sent to UHD for analysis	14 days
C1 Inhibitor	Blood / SST	C1 Esterase	C1IN	Sent to Southampton for analysis	14 days
Copper	Blood / SST	Serum copper	CU	Sent to Southampton Trace for analysis	14 days
C-Peptide	Blood / SST		CPEP	Patient may need to be bled at DCH Must be spun and separated with 2 hours of sampling Sent to Southampton for analysis	14 days

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CTD Screen	Blood / SST	Connective Tissue Disease Screen	CTD	CTD includes anti-histone antibodies. Positive CTD will reflex ENA and DNA. Sent to UHD for analysis	14 days
Cyclosporin	Blood / EDTA		CYCR	Sent to Bristol for analysis	7 days
Factor 2	Blood / Sodium Citrate		F2	Sent to UHD for analysis Must be frozen within 4 hours of sampling. Patient may need to be bled at DCH. Must be filled to within +/-10% of the fill line	6 weeks
Factor 7	Blood / Sodium Citrate		F7	Sent to UHD for analysis Must be frozen within 4 hours of sampling. Patient may need to be bled at DCH. Must be filled to within +/-10% of the fill line	6 weeks
Factor 8 Inhibitor	Blood / Sodium Citrate		F8IN	Sent to UHD for analysis Must be filled to within +/- 10% of the fill line. Must be frozen within 4 hours of sampling. Patients may need to be bled at DCH.	21 days
Factor 10	Blood / Sodium Citrate		F10	Sent to UHD for analysis Must be frozen within 4 hours of sampling. Patient may need to be bled at DCH. Must be filled to within +/-10% of the fill line	6 weeks
Factor 11	Blood / Sodium		F11	Sent to UHD for analysis	6 weeks

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	Citrate			Must be frozen within 4 hours of sampling. Patient may need to be bled at DCH. Must be filled to within +/-10% of the fill line	
Factor 12	Blood / Sodium Citrate		F12	Sent to UHD for analysis Must be frozen within 4 hours of sampling. Patient may need to be bled at DCH. Must be filled to within +/-10% of the fill line	6 weeks
Factor 13	Blood / Sodium Citrate		F13	Sent to UHD for analysis Must be frozen within 4 hours of sampling. Patient may need to be bled at DCH. Must be filled to within +/-10% of the fill line	6 weeks
Factor 5 Leiden & Prothrombin Gene Mutation	Blood / Sodium Citrate		FVL/PGM	Genetic tests designed to detect the abnormal Factor V Leiden (FVL) and Prothrombin Gene Mutations associated with increased risk of thrombus formation. Part of the Thrombophilia screen. This test can only be requested with haematology consultant approval. Sent to UHD for analysis	3 weeks
Faecal Calprotectin	Faeces		FCAL	Sent to UHD for analysis	14 days
Faecal Elastase	Faeces		FEL	Sent to Southampton for analysis	14 days
Free Light Chains	Blood / SST	Kappa/Lambda ratio	FLC	Haemolysed samples are not suitable for analysis Sent to UHD for analysis	7-10 days

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Growth Hormone	Blood / SST		GHB	Sent to Southampton for analysis	14 days
Gut Hormone	Blood / EDTA x2		GUT	Includes: VIP, glucagon, gastrin, PP, somatostatin, CART and chromogranins Unable to use Haemolysed samples Patient will need to be bled at DCH. Transport to the lab within 15mins. Sent to Charing Cross for analysis	21 days
Haemoglobinopathy Antenatal Screen	2 X Blood / EDTA & SST	FOQ Screen, FBH	FBH	Must send FOQ form with Request. These requests are sent to UHD for screening and processing.	3 days
Haemoglobinopathy investigation	Blood / EDTA		HBOP	Sent to UHD for analysis	7 days
Haptoglobin	Blood / SST		HAP	Sent to UHD for analysis	10 days
Homocystine	Blood / EDTA		HOM	Patient will need to be bled at DCH. Sample must be received and separated within 1 hour Sent to Bristol for analysis	7 days
Insulin	Blood / SST		INS	Patient will need to be bled at DCH. Sample must be received and separated within 30 mins Sent to Southampton for analysis	7 days

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Immunoglobulin E / RAST	Blood / SST	IGE / RAST	IGE / RAST	State suspected allergens Sent to UHD for analysis	14 days
Intrinsic Factor Ab	Blood / SST		IFAB	Sent to UHD for analysis	10 days
IGA Anti-Tissue Transglutaminase Ab	Blood / SST	Coeliac Screen	TTG	Sent to UHD for analysis NOTE: Li hep not suitable.	10 days
IGF-1	Blood / SST		IGF1	Sent to Southampton for analysis	14 days
Lead	Blood / EDTA		PB	Sent to Southampton Trace for analysis	15 days
Liver Autoimmune Profile	Blood / SST	Autoimmune Profile	AIP	Note: Includes LC1, LKM1. Use for mitochondrial testing and smooth muscle antibody. Sent to UHD for analysis	14 days
Mast Cell Tryptase	Blood / SST		MASTC	Ideally request separately on ICE (needs to be frozen in receipt at UHD) Sample collection for Anaphylaxis Investigation: Sample 1 - at time on incident Sample 2 - 3 hours post incident / event Sample 3 – 24hours post incident / event Sent to UHD for analysis (must be tested within 7 days of collection)	16 days

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Phenytoin	Blood / SST	Epanutin	PHY	Sent to UHD for analysis	2 days
Phenobarbitone	Blood / SST		PHB	Peak not critical, trough pre dose. Sent to Southampton for analysis	7 days
Plasma Metanephrines	Blood / EDTA		PMET	Patient will need to be bled at DCH. Sample must be received and separated within 30 mins Sent to Charing Cross for analysis	21 days
Platelet Aggregation Test	Blood / Sodium Citrate			Special Request Only. Contact laboratory. Patient will need to attend Basingstoke (Hampshire Hospital Foundation Trust)	24 hours
Platelet Function Test	Blood / Sodium Citrate	PFA 100		Special request only, contact haematology laboratory on 4382. Test is performed at UHD.	24 hours
Protein Electrophoresis	Blood / SST	Myeloma screen Paraprotein Quantification	PE	Monoclonal antibody drugs may appear as a small paraprotein band - Take a trough (just before next drug dose) sample to minimise this interference. Please state relevant medication on request form. Sent to UHD for analysis	7-10 days
Tacrolimus	Blood / EDTA		TACL	Trough = 12 hours post dose and /or prior to dose. Sent to Southmead for analysis	5 days
Thrombophilia Profile	Blood / Sodium Citrate x5		THRV	Panel of tests to detect conditions associated with increased risk of unwanted thrombus- Thrombophilia. Panel includes Lupus anticoagulant screen, Anti-Thrombin	6 weeks

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	Blood / SST x1			<p>level, Protein C level, Free Protein S antigen level, Factor V Leiden gene, Prothrombin mutation 20210A gene, anticardiolipin antibodies, and anti B-2 glycoprotein antibodies. Additional test may be included at the discretion of the Haematologists. Must be frozen within 4 hours of sampling.</p> <p><u>Specific Sample Requirements:</u></p> <ul style="list-style-type: none"> Requires 5 x citrate tubes appropriately filled AND 1 x serum tube. <p>This test can only be requested with haematology consultant approval.</p> <p>Patient may need to be bled at DCH Sent to UHD for analysis</p>	
Anti-Thyroid Peroxidase Ab	Blood / SST	TPO	TPO	Sent to UHD for analysis	10 days
Urine Organic Acids	Urine / Yellow monovette		UORG	Sent to Southampton for analysis	14 days
Urine Drugs of Abuse	Urine / Yellow monovette		DOAR	<p>Sent to Birmingham for analysis</p> <p>Please inform the lab if this is urgent prior to sending.</p>	7 days
Valproate	Blood / SST	Epilim	VALP	Sent to UHD for analysis	2 days
Von Willibrand Disease Screen	Blood / Sodium Citrate x3		VWDS	<p>A screening test for Von Willebrand's disease (VWD). Screen includes a Factor VIIIa level (F8a), a clotting screen (CS), plus a Ristocetin Co-factor activity (Ricof) and Von Willebrand Factor antigen level (VWFag) .</p>	5 weeks

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				<p>Abnormal results may require further specialist testing by arrangement with the Haematology consultants.</p> <p>This test can only be requested with haematology consultant approval.</p> <p><u>Specific sample requirements:</u></p> <ul style="list-style-type: none"> Needs to be frozen within 4 hours of sampling. <p>Patient may need to be bled at DCH.</p> <p>Sent to UHD for analysis</p>	
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General Information for Users

Location of the Laboratory

The Pathology Department is located on the 3rd floor North Wing at Dorset County Hospital site.

Types of clinical services offered

All above investigations and services are either offered in-house at the Dorset County Hospital site or are sent out to referral laboratories.

For any investigations which are not listed above or to access further information on sendaway tests, please contact the laboratory on **01305 254331**




Opening hours of the laboratory

Pathology Specimen Reception is open 09:00 - 21:00 7 days a week

Blood Sciences (Biochemistry, Haematology and Hospital Transfusion)

The Blood Sciences Laboratory is staffed 24hr each day; however for significant periods (22:00 – 09:00 Mon - Fri and 17:00-09:00 Sat + Sun + BH) there is minimal staffing within the department. During these periods ***only emergency/urgent work is processed*** across Chemistry, Haematology and Blood Transfusion- Please be aware that ***non-urgent tests will not be analysed during these periods***.

Note: Blood Transfusion handles routine requests Monday - Friday 09:00 - 17:00; ***Outside these hours only emergency requests are processed.***

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Consent

Consent for the requested examinations, including any appropriate follow up tests, is regarded as having been granted by the patient by permitting the samples to be taken. Implicit in this is the consent to disclose relevant clinical information and family history to other healthcare professionals when testing is performed by a referral laboratory.

Personal Information Protection




It is part of all DCHFT employment contracts that individuals will comply with the NHS Confidentiality: Code of Practice. The laboratory will appropriately protect patient information at all times.

Sample transportation – outside of DCHFT

For samples being transported from locations outside of the DCHFT site (e.g. GPs, community hospitals) the following will apply as per PAN PATH-CONT DOC 0055

PACKAGING INSTRUCTION PI650 (applies to UN3373)

1. The packaging shall be of good quality, strong enough to withstand the shocks and loadings normally encountered during carriage, including trans-shipment between vehicles. Packagings shall be constructed and closed to prevent any loss of contents that might be caused under normal conditions of carriage by vibration or by changes in temperature, humidity or pressure.
2. The packaging shall consist of three components:
 - (a) a primary receptacle; e.g. specimen pot or tube
 - (b) a secondary packaging; e.g. specimen bag, and
 - (c) an outer packaging e.g. transit box

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3. Primary receptacles shall be packed in secondary packagings in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packagings shall be secured in outer packagings with suitable cushioning material. Any leakage of the contents shall not compromise the integrity of the cushioning material or of the outer packaging.
4. For transport, the UN 3373 mark shall be displayed on the external surface of the outer packaging and shall be clearly visible and legible. The letters and numbers shall be at least 6 mm high.




Samples which are unable to be transported to the department on the same day as collection may not be suitable for analysis on receipt. Please phone the lab for guidance 01305 254331.

Sample Transportation – within DCHFT

Generally samples are sent to the department via the pneumatic tube system (POD) for urgent samples, or via the phlebotomist ward rounds. All Pathology specimens must be transported in the plastic specimen transport bags provided together with the relevant request form.

The POD system **MUST not be used** for the transport of:

- ◆ CSF samples
- ◆ Serum samples for cryoglobulins
- ◆ 24 hour urine samples
- ◆ Blood units or blood products for transfusion

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Comments and Complaints

If there are any issues which require addressing, please contact the department and ask to speak to the Head of Department or one of their deputies (01305 254331). Any complaints will be registered via our Non-Conformance procedure. Consultants may be contacted via e-mail or telephoned via switchboard.

Clinical decision values & Clinical advice

Clinical decisions are taken on results outside normal values and further information if required can be obtained by contacting the laboratory on **01305 254331**




Instructions for completion of the request form

User guide is available for “Ordercoms” (ICE) requesting on DCH website. Manual requesting forms should have all of the information filled where a space is provided for the information. **Note:** A minimum three points of identification on requests is usually required, **including a unique identifier (hospital or NHS number)**, these details must match the details on the accompanying specimens.

Instructions for preparation of the patient

Information on specific tests where patient needs to be prepared before specimen is taken can be obtained by contacting the laboratory on **01305 254331**

24 hours urine containers can be obtained from the lab by calling 01305 254331. Patient guidance on specific 24hour urine collections can be found on the Pathology Intranet.

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Instructions for patient collected samples

Patient collected specimens can be dropped off at Pathology reception which is located on the 3rd floor North Wing at Dorset County Hospital site.

Laboratory acceptance/rejection criteria

Specimens where the criteria are not met will result in the associated specimens being rejected. A copy of the criteria can be found on the pathology intranet.

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